Digital Video Recorder

Models:	DLR3-08N/160CD,	DLR3-16N/160CD,
	DLR3-08N/410CD,	DLR3-16N/410CD,
	DLR3-08N/660CD	DLR3-16N/660CD

eneo®

Safety instructions

EMC class

► This digital video recorder (DVR) is a class A device in accordance with EN 55022.

► This device may cause interference to other equipment in domestic use. In such cases the persons operating the DVR are required to provide appropriate countermeasures, for which they themselves bear the cost.

Importance of these Operating Instructions

► Please read the safety instructions and the other information contained in the Operating Instructions before connecting up and operating the DVR.

► The Operating Instructions should be kept in a safe place for later reference.

Ambient conditions

► The DVR should be protected against excessive heat, dust, moisture and vibration.

► The DVR may only be operated at temperatures between +5°C and +40°C, and up to a maximum air humidity of 90%.

► The DVR may only be operated indoors, and must be protected against ingress of water and moisture.

Care of the DVR

► Never switch on the DVR when moisture has penetrated it. In such cases, have the DVR checked by a qualified service engineer.

► Do not place any heavy objects on the DVR.

► Never cover over the DVR's vents.

► Never insert metal objects or any other items into the vents. This may permanently damage the DVR.

► The housing may only be opened by authorised persons. Repairs may only be carried out by qualified service personnel.

► The DVR must be disconnected from the power supply before its housing is opened.

Getting started with the DVR

► When laying the connecting cables, make sure no weight is placed on them, that they are not kinked or damaged, and that no moisture can penetrate them..

Cleaning

► The housing of the DVR may only be cleaned with a moisture (not wet) cloth.

► Use only a mild detergent. Do not use solvent-containing detergents or petrol. This could permanently damage the surface finish.

Spare parts

► Use only original spare parts from Videor Technical GmbH..

Table of contents

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Overview

Package contents

- Digital video recorder (DVR)
- Mains power cord
- Operating instructions
- RAS (Remote Administration System) software on CD
- Operating instructions for RAS software on paper and CD
- Mounting kit for rack installation

Basic functions

- Recording of video images from multiple cameras
- Event-triggered start of recording
- Video playback
- Search for specific video sequences

Features

- MPEG-4 compression / duplex mode
- 8 or 16 loop-through inputs / VGA, FBAS outputs
- Audio and alarm inputs / outputs
- Max. recording speed: 100 field images per sec (PAL)
- Memory capacity 160 GB / 410 GB / 660 GB
- Maximum video resolution 720 x 576 pixels
- Archiving/image transfer via USB and CD-RW
- Live picture & Playback Zoom (2x)
- Integrated motion detector
- Telemetry control functions via RS-485 port
- Network port (Ethernet)
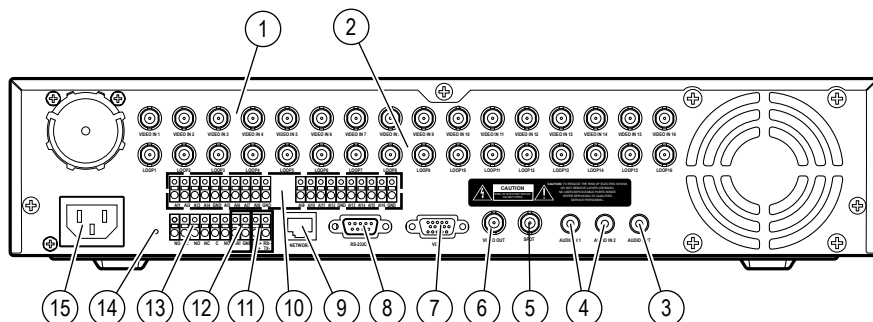
Requirements for operation

- Digital video recorder DLR3 connected
- At least 1 camera connected
- At least 1 monitor connected
- Mouse connected, if DVR is to be controlled by mouse

Control options

- Front panel
- Mouse
- RAS program

Connections on the rear

Note: Connections optionally for NTSC or PAL operation.

No.	Designation	Functions/connections	Example devices
1	VIDEO IN 1-16	Max. 16 video channels	Cameras
2	LOOP 1-16	Max. 16 loop-through video channels	Cameras
3	AUDIO OUT	Audio output	Amplifier, speakers
4	AUDIO IN 1, AUDIO IN 2	Max. 2 Audio inputs	Microphone
5	SPOT	Video output	Spot monitor
6	VIDEO OUT	Video output	Monitor
7	VGA	PC monitor	PC monitor
8	RS-232C	External interface	Modem
9	NETWORK	Network	Network cable
10	AI1 - AI16	Alarm inputs for external devices	Sensors
11	/RX+, /RX-, TX+, TX-	External interface (RS-485)	Keyboard, PTZ camera
12	ARI/GND	Reset alarm with external signal	Switch
13	NO, C, NC	Alarm outputs for external devices	Siren, flashing light
14	Reset switch	Reset to factory defaults	-
15	Power supply	Mains power connection	-

Front panel controls

The following diagram and table shows the controls on the front panel of the DVR:
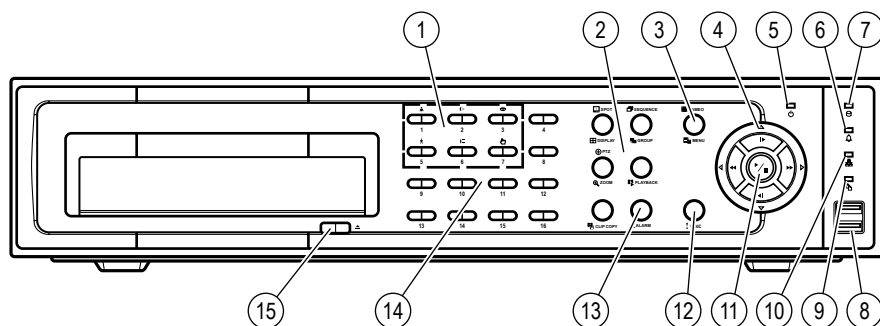
No.	Designation	Function
1	👤 👤 ▷ I— 👋 👁	PTZ camera functions (secondary assignment)
2	SPOT, SEQUENCE, CAMEO, DISPLAY, GROUP, PTZ, ZOOM, PLAYBACK, CLIP COPY	Function buttons
3	MENU	Open/quit menu structure (primary assignment)
4	Menu navigation	Navigate and select within the menu structure (secondary assignment)
5	⏻	Power-on indicator when DVR is in operation
6	🔔	Alarm indicator
7	🖴	Indicates hard disk operation
8	Connections	USB ports
9	🗐	Indicates recordings being copied
10	🖧	Indicates Ethernet or modem connection
11	▶/❚❚ ◀◀ ▶▶ ◀❙ ❙▶	Playback functions (primary assignment)
12	PANIC	Start/end panic recording
13	ALARM	● Reset alarm ● View event list
14	1 to 16	● Select cameras ● Enter passwords
15	▲	Eject built-in CD-RW writer

Key to controls

Function buttons

Note: The secondary function assignment is accessed by holding down the key.

Element	Function
▣	Spot monitor assignments (secondary assignment)
🗗	Sequence On/Off (secondary assignment)
▦	Cameo mode On/Off (secondary assignment)
⊞	Switch image view modes (primary assignment)
🖳	Switch displayed group (primary assignment)
⊕	PTZ camera functions On/Off (secondary assignment)
🔍	Zoom On/Off (primary assignment)
▶	Start playback
🖳	Copying recordings

⊕ PTZ camera functions

Element	Function
👤	Zoom in
🧍	Zoom out
◗✕	Close-up
◗▬	Wide-angle
👆	Save preset
👁	Load preset

Playback functions

Element	Function
◀❘	Frame-by-frame rewind
◀◀	Fast rewind
▶/❚❚	Start/pause playback
▶▶	Fast forward
❘▶	Frame-by-frame forward

Menu structure

The following diagram shows the menu structure:

Display ▶	Camera ▶	1. CAM1
		2. CAM2
		3. CAM3
	PIP	
	2x2	
	3x3	
	4x4	
	Previous Group	
	Next Group	
	Edit Group	Camera
		Spot monitor...
		Exit Group Edit
Sequence		
Freeze		
Zoom...		
PTZ...	Speed	
	Auto Pan	
	Tour	
	Pattern	
	Device Menu	
	Light	
	Pump	
	Wiper	
	Power	
	Aux.	
	Move to Origin	
	Spot Monitor...	
	Exit PTZ	
Spot Monitor...	Spot Monitor 1	
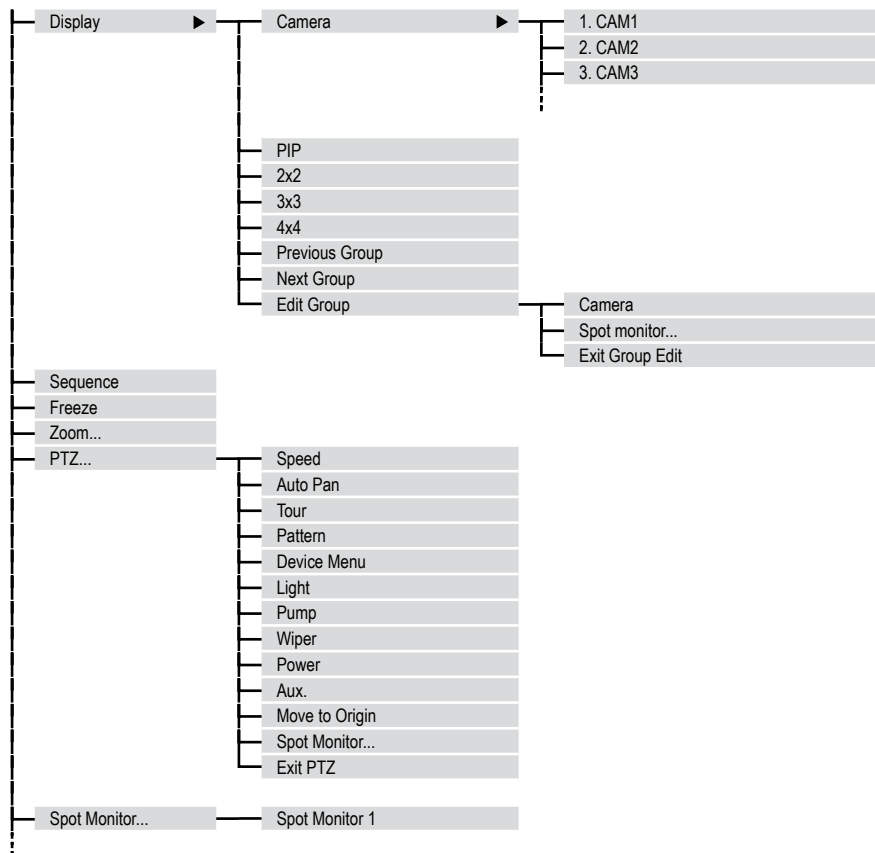
Menu structure, continued

The following diagram shows the menu structure:

```
Setup menu...          System              Information
                                           Date/Time
                                           Storage
                                           User
                                           Shutdown...
                                           Log out user1...

                       Network             Network
                                           Notification

                       Devices             Camera
                                           Audio
                                           Alarm-Out
                                           Display
                                           Remote Control

                       Record              Record
                                           Schedule
                                           Pre-Event

                       Event               Alarm-In
                                           Motion Detection
                                           Video Loss
                                           Text-In
                                           System Event
                                           Event Status

Search                 Go to the First
                       Go to the Last
                       Go to the Date/Time...
                       Calendar Search...
                       Event Log Search...
                       Text-In Search….
                       Motion Search...
                       Clip-Copy...
                       Zoom...
                       Slow Play          ▶       x1
                                                  x1/2
                                                  x1/3
                                                  x1/4
                                                  x1/6
                                                  x1/8

                       Exit Search
```

Getting started

Checklist for DVR operation

Step	Action	Menu path
1	Connect peripheral devices as per planned setup.	
2	Specify menu language..	Setup menu... > System > Information
3	Adjust date and time..	Setup menu... > System > Date/Time
4	Set up user.	Setup menu... > System > User
5	Set up network and desired notification channels (optional).	Setup menu... > Network > ...
6	Register peripherals with DVR.	Setup menu... > Devices > ...
7	Set up event types and associated responses.	Setup menu... > Event > ...
8	Set up recording parameters and schedule.	Setup menu... > Record > ...

Getting started, continued

Switching on the DVR

Requirement:
- The start-up preparations are complete.

Step	Action
1	Plug in DVR mains plug.
2	Switch on monitor. **Result:** System starts up automatically and is ready to use..

Accessing the Setup menu

Requirement:
- The DVR is switched on.
- You have set up a custom user name and password or
  you are using the following default access data (only when first accessing the Setup menu):
  User name: admin
  Password: (blank)

Step	Action	Menu path
1	Open Setup menu. **Result:** Prompt for user name and password.	Setup menu...
2	Log in as user.	

Switching off the DVR

Requirement:
- You have accessed the Setup menu.

Step	Action	Menu path
1	Shut down system. **Result:** System shuts down automatically.	Setup menu > System > Shutdown ...
2	After shutdown, disconnect the mains plug.	

Administration

Saving your system setup

You can save your DVR's setup data, including its network configuration.

Requirement:

● USB memory stick

Step	Action	Menu path
1	Insert a USB memory stick into one of the USB ports	
2	Export your setup.	Setup menu... > System > Information > Setup Export...
3	Specify a file name.	
4	Export your setup.	Export

Loading your system setup

You can load your stored DVR system setup with or without its network configuration.

Requirement:

● USB memory stick with stored setup

Step	Action	Menu path
1	Insert a USB memory stick into one of the USB ports.	
2	Import your setup.	Setup menu... > System > Information > Setup Import...
3	Select the file name and, where appropriate, the network configuration.	
4	Import your setup.	Import

Deleting recordings

You can only delete all your recordings together. It is not possible to delete recordings from a specific time period.

Step	Action	Menu path
1	Delete all recordings.	Setup menu > System > Information > Clear All Data... or Setup menu > System > Storage > Information tab > Using > Clear

Administration, continued

Downloading software updates

You can download software updates for your DVR from a USB memory stick.

Requirement:

● USB memory stick with latest software release

Step	Action	Menu path
1	Insert a USB memory stick into one of the USB ports.	
2	Start update.	Setup menu... > System > Information > Upgrade...
3	Install new release	

Hiding from specific users

You can hide video images and camera data according to the preset user rights.

Step	Action	Menu path
1	Set camera Covert mode.	Setup menu... > Devices > Camera > Settings
2	Cancel 'Covert Camera View' access for specific users (groups).	Setup menu... > System > User

Restoring factory defaults

Before restoring the factory defaults, you should export your current system settings in case you need to re-import them later. (see *Saving your system setup* and *Loading your system setup*)

Step	Action
1	Shut down the system.
2	Disconnect the mains plug.
3	Push a paper clip into the Reset button (on the rear of the DVR) and hold it there.
4	Plug in the mains plug.
5	Wait for all the LEDs to flash 5 times (about 30 seconds).
6	Withdraw the paper clip.

Administration, continued

Determining the memory requirement of a recording

The amount of memory recorded video sequences will take up depends on the following factors:

● picture quality
● number of images per second
● duration

The memory requirement is calculated by this formula:

> **Memory requirement = picture size x duration of recording x images per second**

Example calculation of CIF resolution (PAL):

Picture quality	Picture size	Duration of recording	Approx. memory space		
			5 images/s	10 images/s	25 images/s
Basic	2.4 KB	24 hours	1.04 GB	2.07 GB	5.18 GB
Standard	4.8 KB	24 hours	2.07 GB	4.15 GB	10.37 GB
High	9.6 KB	24 hours	4.15 GB	8.29 GB	20.74 GB
Very high	14.4 KB	24 hours	6.22 GB	12.44 GB	31.10 GB

Example calculation of 2CIF resolution (PAL):

Picture quality	Picture size	Duration of recording	Approx. memory space		
			5 images/s	10 images/s	25 images/s
Basic	4.8 KB	24 hours	2.07 GB	4.15 GB	10.37 GB
Standard	9.6 KB	24 hours	4.15 GB	8.29 GB	20.74 GB
High	19.2 KB	24 hours	8.29 GB	16.59 GB	41.47 GB
Very high	28.8 KB	24 hours	12.44 GB	24.88 GB	62.20 GB

Searching for recordings

Find first stored recording

Search	⇨	Go to the First…

Find last stored recording

Search	⇨	Go to the Last…

Find recording by date and time

Search	⇨	Go to the Date/Time...
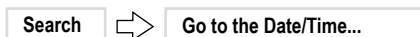
Calendar search

For each camera the calendar search indicates:
● the days from which there are recordings
● the time ranges of recordings on those days

Search	⇨	Calendar Search...

Event log search

The event log search enables you to search for events based on specific criteria, such as:
● movements recorded by a specific camera
● alarm from a specific alarm input
● System events

Search	⇨	Event Log Search...

Text-in search

The text-in search enables you to search for recordings based on specific text inputs.

Search	⇨	Text-In Search…

Motion search

The motion search function can detect movements in recordings within defined zones for one camera. 2 types of motion search are possible:
● Motion search: Search for movement in a defined zone.
● Museum search: Search for movement of a defined object.

Search	⇨	Motion Search...

Copying recordings

Recordings can be written to a CD or copied to a USB memory stick.

Search	⇨	Clip-Copy...

Using calendar search

Performing a calendar search

Step	Action	Menu path
1	Open calendar search. **Result:** Calendar and time line are displayed.	Search > Calendar Search...
2	Select day and time	
3	Confirm input.	Go

Search ⟹ **Calendar Search...**

Term	Symbol	Meaning
	▦	Date display ● Grey: No recording available ● White: Recording available
	▭▬▭	Hours display ● White: Recording available
Select a Segment	▭▾	If the date and time on the DVR have been changed (such as when switching to Summer time) there may be multiple recordings for one time from the same camera. They are stored in separate segments.

Using event log search

Performing an event log search

| Step	Action	Menu path
1	Open event log search. **Result:** The result of the last search is displayed.	Search > Event Log Search...
2	Define criteria.	Option...
3	Confirm input. **Result:** List of search results is displayed.	Search
4	Select desired entry from list.	

Search ⇨ **Event Log Search...** ⇨ **Option...**

Term	Symbol	Meaning
From First	☑ ⌐...⌐	Start date
To Last	☑ ⌐...⌐	End date
Check Time Overlap	☑	Activates a system prompt if there are multiple recordings for the same time range
Alarm-In	⌐...⌐	Alarm inputs in response to which a search for events is to start
Motion	⌐...⌐	Cameras on which to search for motion detection
Video Loss	⌐...⌐	Cameras on which to search for video loss
Text-In	⌐...⌐	Text input devices on which to search for events
Record Channels	⌐...⌐	Cameras on which to search for events
	☑ ☑ ☑	Search for system events: Setup menu > Event > System Event > Actions

Using text-in search

Performing a text-in search

Step	Action	Menu path
1	Open text-in search. **Result:** The result of the last search is displayed.	Search > Text-In Search...
2	Define text inputs.	Option...
3	Confirm input. **Result:** List of search results is displayed.	Search
4	Select desired entry from list.	

Search ⇨	**Text-In Search…** ⇨	**Option...**
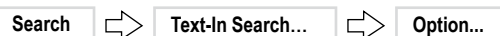
Term	Symbol	Meaning
From First	☑ [...]	Start date
To Last	☑ [...]	End date
Channels	[...]	Text input devices on which to search for events
	[▼]	Type of text input:
		Any Text-In Product
		Generic Text
		Epson
No.	☑	Numbers of text elements to search for
Keyword	[...]	Text element
Case Sensitive	☑	Makes search case-sensitive

Using motion search

Performing a motion search

Step	Action	Menu path
1	Display desired camera in single frame.	Display > Camera > ...
2	Open motion search.	Search > Motion Search...
3	Enter settings for motion search.	Option...
4	Confirm input. **Result:** List of search results is generated.	Search
5	Select desired entry from list.	

Search	⇨	Motion Search...	⇨	Option...

Term	Symbol	Meaning	
From First	☑ ⬚ ...	Start date	
To Last	☑ ⬚ ...	End date	
Type	⬚ ▾	Type of search:	
		Motion Search	Search for movement in a defined zone
		Museum Search	Search for movement of a defined object
Zone	⬚ ...	Definition of motion-sensitive zones for motion search or museum search: *See "Zone" on page 46.*	
Sensitivity	⬚ ▾	Sensitivity of motion detection of:	
		1 (Dull)	
		2	
		3	
		4	
		5 (Sensitive)	
Min. Blocks	⬚ ...	Motion search only (not museum search): Specify in how many motion-sensitive blocks motion must be detected as a minimum to trigger an alarm	

Copying recordings

Copying recordings to CD or USB memory stick

Step	Action	Menu path
1	Find desired recordings. **Note:** Make a note of the data of the recordings you want to copy.	Search > ...
2	Define settings.	Search > Clip-Copy...
3	Start copying. **Result:** The recordings are copied.	Start

Search	⇨	Clip-Copy...

Term	Symbol	Meaning
Data Source	☐	Record
From First	☑ ☐...	Start date
To Last	☑ ☐...	End date
Channels	☑ ☐...	Assignment of cameras from which recordings are to be copied
Password	☐...	Use password, if desired
Dest.	☐▾	Destination medium:
		Internal CD-RW
		USB CD-RW
		1. USB Storage
		2. USB Storage
		3. USB Storage
File name	☐...	Name of file on destination medium
Status	☐	Copy status

Menu descriptions – Setup menu

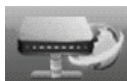The Setup menu has the following sub-menus:

System menu

On the "System" menu
- the basic settings are made
- users are administered
- the system is shut down

Network menu

On the "Network" menu the network settings are made. Network access provides access to all the functions of the DVR via
- RAS (Remote Administration System), independent of Internet Explorer

The DVR can be configured so that alarms trigger a notification by e-mail or notify an RAS.

Devices menu

On the "Devices" menu the connected peripheral devices are configured. Possible peripherals are:
- Cameras
- Microphones and speakers (through amplifier)
- Sirens and signal lamps
- Monitors
- Remote control for PTZ

Record menu

On the "Record" menu the following settings are made:
- Recording quality
- Timer control
- Duration of pre-event recording

Event menu

On the "Event" menu the following settings are made:
- Assignment of alarm inputs to alarms
- Configuration of motion-sensitive zones individually for each camera
- Definition of text input device and assignment to alarms
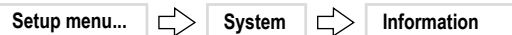- Response to undesirable events

The event status is additionally displayed.

Setup menu

System – Information

On the "Information" menu
- basic information is entered and displayed
- software updates are installed
- recorded data are deleted as required

Setup menu...	⇨	System	⇨	Information

Term	Symbol	Meaning
Site	[...]	Location of DVR
System ID	[...]	ID for remote keypad • The remote keypad and DVR must be set to the same ID.
Language	[▼]	Menu language
Version	[ ]	Version of DVR software
Upgrade...	[ ]	Starts installing latest version of software via USB port
Import...	[ ]	Import setup
Export...	[ ]	Export setup
Show System Log...	[ ]	Show log of all actions and events
From	[ ]	Date of oldest recording
To	[ ]	Date of newest recording
Clear All Data...	[ ]	Deletes all stored data

Setup menu, continued

System – Date/Time

On the "Date/Time" menu
- time and date settings are made
- dates of public holidays are entered
- time synchronisation is configured.

| Setup menu... | ⇨ | System | ⇨ | Date/Time | ⇨ | ▭ Date/Time |

Term	Symbol	Meaning
Date	⬚ ...	Date
Format	⬚ ▾	Date display format
Time	⬚ ...	Time
Format	⬚ ▾	Time display format
Time Zone	⬚ ▾	Local time zone
Use Daylight Saving Time	☑	Activates use of summertime Daylight Saving Time

| Setup menu... | ⇨ | System | ⇨ | Date/Time | ⇨ | ▭ Holiday |

Term	Symbol	Meaning
No.	⬚	Number of entered public holiday
Date	⬚ ...	Date of each desired public holiday

| Setup menu... | ⇨ | System | ⇨ | Date/Time | ⇨ | ▭ Time Sync |

Term	Symbol	Meaning
Automatic Sync	☑	Activates synchronisation with time server
Time Server	⬚ ...	IP address of time server
Interval	⬚ ▾	Synchronisation interval
Last Sync-Time	⬚	Time of last synchronisation
Run as Server	☑	Activates use of the DVR as the time server

Setup menu, continued

System – Storage

On the "Storage" menu the status and usage of the available storage media is displayed.

Setup menu...	⇨	System	⇨	Storage	⇨	▭ Information

Term	Symbol	Meaning
Type		Type of storage medium
Capacity		Size of storage medium
Format		Storage medium usage >>
Information		Time range of recorded data >>

⇨ | ▭ **Format**

Term	Symbol	Meaning	
Use as	⌄	Use of storage medium:	
		Record	
		Archive	
		Not using	
Partition	☑	Activating permits:	
		CD/DVD burn	Reserves a data buffer as a separate partition. This is essential for burning CDs, and must be activated for a storage medium with „Record" usage..
Format		Formatting deletes the recordings from the hard disk	

⇨ | ▭ **Information**

Term	Symbol	Meaning
From		Start date of recorded data
To		End date of recorded data
Clear		Delete all recordings

Setup menu, continued

| Setup menu... | ⇨ | System | ⇨ | Storage | ⇨ | ☐ Status |

Term	Symbol	Meaning
Type		Memory type
Disk Bad		Data carrier status
Temperature		Temperature status
S.M.A.R.T.		Result of S.M.A.R.T. check

Setup menu, continued

System – User

On the "User" menu the user groups and individual users are set up.

Setup menu...	⇨	System	⇨	User
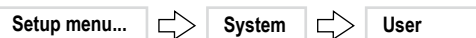
Term	Symbol	Meaning
Group & User, Group field	☐	Assignment of group access privileges Table of possible group access privileges >>
Group & User, User field	⬚ ...	Set password
+ Group...	☐	Add a new group
+ User...	☐	Add a new user Set password
Auto Login	▼	User to be logged in automatically
Auto Logout	▼	Time after which logged-in user is automatically logged out

⇨ ▦ **Table of possible group access privileges**
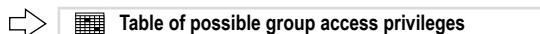
Group access privilege	Meaning
Shutdown	May shut down the DVR
Upgrade	May install a new firmware version
System Time Change	May change the time setting
Data Clear	May delete recording data
Setup	May make changes anywhere on the Setup menu
Color Control	May change the picture settings
PTZ Control	May control PTZ cameras
Alarm-Out Control	May reset alarms
Covert Camera View	May view video images from covert cameras
System Check	May interrogate system status
Record Setup	May make changes to the Record menu
Search	May use Search mode
Clip-Copy	May copy video images

Setup menu, continued

System – Shutdown

Setup menu...	⇨	System	⇨	Shutdown...

System – Log out USER...

Setup menu...	⇨	System	⇨	Log out USER...

Network – Network

On the "Network" menu all settings required to ensure network access are made.

Setup menu...	⇨	Network	⇨	Network	⇨	🗀 Network

Term	Symbol	Meaning	
Transfer Speed	⬚...	Transmission bandwidth:	
		(bps)	bits per second
		(ips)	images per second
Quality	⬚▾	Quality of picture transmission via network (PAL):	
		Very High	14.4 KB/picture
		High	9.6 KB/picture
		Standard	4.8 KB/picture
		Basic	2.4 KB/picture

Setup menu, continued

Setup menu...	⇨	Network	⇨	Network	⇨	☐ **LAN**

Term	Symbol	Meaning	
		Type of connection to DVR:	
Type	⌄	Manual	Manual connection required input of: ● IP address ● Gateway ● Subnet mask
		DHCP	Automatic assignment of IP address of DNS server
		ADSL (with PPPoE)	Requires following input as specified by provider: ● ID ● Password
		Note: Use of modem must not be activated.	
DNS Server	⌐ ... ⌐	Address of DNS server	
Port Number Setup...	☐	Definition of port numbers needed to access the DVR via the RAS software	

Setup menu...	⇨	Network	⇨	Network	⇨	☐ **Modem**

Term	Symbol	Meaning
Enable	☑	Enables modem use **Note:** LAN type ADSL must not be enabled.
Baud Rate	⌄	Baud rate
Data	⌄	Number of data bits
Stop Bit	⌄	Number of stop bits
Parity	⌄	Parity

Setup menu, continued

| Setup menu... | ⇨ | Network | ⇨ | Network | ⇨ | ☐ DVRNS |

Term	Symbol	Meaning
Use DVR Name Service	☑	Enables the DVR name service
DVRNS Server	⬚ ...	IP address or domain name of DVRNS server DVRNS = Digital Video Recorder Name Service
Port	⬚ ...	Port for DVRNS
Use NAT	☑	Enables NAT (Network Address Translation) use
DVR Name	⬚ ...	Name by which the DVR is to be registered with the DVRNS server
Check	⬚	Check DVR name for usability after entering
Help Desk	⬚	Information from help desk if DVRNS setting correct

Setup menu, continued

Network – Notification

On the "Notify" menu the method of notification is defined.

Setup menu... ⇨	Network ⇨	Notification ⇨	☐ Mail

Term	Symbol	Meaning
Enable	☑	Enables notification by e-mail
SMTP Server	(...)	IP address of SMTP server
Port	(...)	Port for SMTP server Default is port 25.
Authentication	(...)	Login to SMTP server
Sender	(...)	E-mail address of sender
Recipient	(...)	E-mail address of recipient

Setup menu... ⇨	Network ⇨	Notification ⇨	☐ Callback

Term	Symbol	Meaning
LAN	☑	Enables notification of an RAS via LAN
No.	( )	Number of IP address
IP Address	(...)	IP addresses of RAS PCs
Retry	(...)	Number of notification attempts by the DVR in the event of an error
Modem	☑	Enables notification of an RAS via modem
Remote Server Phone Number	(...)	Telephone number of the modem on the notified RAS PC
Outside Line Call	(...)	Outside line code for external calls, if DVR's modem is connected to a PABX system
Callback Phone Number	(...)	Telephone number of DVR's modem The RAS PC contacts the DVR on this number.

Setup menu, continued

Devices – Camera

On the "Camera" menu the cameras are configured.

Setup menu...	⇨	Devices	⇨	Camera	⇨	🗀 Settings

Term	Symbol	Meaning	
No.	☑	Activates the cameras	
Title	⬚...	Name of camera	
Use	⬚▾	Visibility of recordings and camera data depending on user access privileges:	
		Normal	All users see all camera data and all recordings
		Covert1	Users without relevant access see camera title, status symbol, but no recordings
		Covert2	Users without relevant access see only camera title, but no recordings

Setup menu...	⇨	Devices	⇨	Camera	⇨	🗀 PTZ

Term	Symbol	Meaning
No.	⬚	Number of camera
Product	⬚▾	PTZ camera type as per specified list
ID	⬚...	Unique ID of PTZ camera
Port	⬚▾	Interface type of PTZ cameras
Setup…	⬚	Settings as specified by PTZ camera manufacturer:
		Baud Rate
		Data Bit
		Stop Bit
		Parity

Setup menu, continued

Devices – Audio

On the "Audio" menu the audio outputs are assigned to the cameras.

| Setup menu... | ⇨ | Devices | ⇨ | Audio |

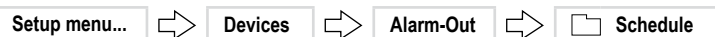| Term	Symbol	Meaning
No.	⬜	Number of audio output
Associated Camera	⬤▾	Assignment of camera
Enable Audio-Out	☑	Enables all audio outputs

Setup menu, continued

Devices – Alarm-Out

On the "Alarm-Out" menu the alarm outputs are configured.

- "Settings" tab: The alarm outputs are configured.
- "Schedule" tab: Time slots are defined in which the alarm outputs respond in specific ways.

Setup menu... ⇨	Devices ⇨	Alarm-Out ⇨	▢ Settings

Term	Symbol	Meaning	
No.	▭	Number of alarm output	
Title	⬭ ...	Name of alarm output	
Type	⬭ ▼	Contact method of alarm output:	
		NO	Normally Open
		NC	Normally Closed
Dwell time	⬭ ▼	Duration of alarm signal	

Setup menu... ⇨	Devices ⇨	Alarm-Out ⇨	▢ Schedule

| Term	Symbol	Meaning	
No.	▭	Number of schedule entry	
Day	⬭ ▼	Day of the week	
Range	⬭ ...	Time range at 15-minute intervals	
Mode	⬭ ▼	Response in defined period:	
		On	Continuous alarm
		Event	Alarm in response to event
		Off	No alarm
Channels	☑ ⬭ ...	Enable ● alarm outputs ● internal beep by DVR	

Setup menu, continued

Devices – Display

On the "Display" menu the mode of on-screen display is configured.

- "OSD" tab: Specify what additional information is displayed on-screen.
- "Main Monitor" tab: Specify how the camera images are displayed on the main monitor.
- "Spot Monitor" tab: Specify which cameras are displayed on the spot monitors.

| Setup menu... | ⇨ | Devices | ⇨ | Display | ⇨ | 🗀 OSD |

Term	Symbol	Displayed symbol	Meaning
Status			
Zoom	☑	🔍	Visible when Zoom mode enabled
Network	☑	🖧	Visible when DVR operating in a network
Freeze & Sequence	☑	�֍ 🗗	• Visible when freeze frame enabled • Visible when Sequence mode enabled
Screen Group	☑	1/4	Displays number of groups, and their ID numbers
Free Space	☑	📥	• Visible when Recycle mode enabled • Remaining hard disk capacity, if Recycle mode not selected
Date	☑	-	Date display
Time	☑	-	Time display
User name	☑	-	Display of user name
Camera			
No.	☑	-	Display of camera number
Title	☑	-	Display of camera title
Record	☑	🎦 🗓 ⊙	Display of Record symbols
PTZ	☑	PTZ	Visible when PTZ camera is displayed
Text-In	☑	-	Display of character string
Transparency	[...]	-	Transparency of menu screens
OSD Margin...	[...]	-	Distance of displayed symbols from screen margin

Setup menu, continued

Setup menu...	⇨	Devices	⇨	Display	⇨	▢ Main Monitor

Term	Symbol	Meaning	
Mode	▾	Modes of sequences in multiple playback:	
		Full Sequence	All cameras are switched through sequentially.
		Cameo Sequence	Only the image at the bottom right is switched through; cameras in „Covert" mode are not displayed to users without „Covert" access.
Interval	▾	Time interval between picture refresh	
Event Monitoring On	☑	Displays image of relevant camera in full-screen mode when an event occurs	

Setup menu...	⇨	Devices	⇨	Display	⇨	▢ Spot Monitor

Term	Symbol	Meaning
No.	▭	Number of spot monitor output
Channels	▾	● Cameras ● Display time of recordings from cameras on spot monitor

Devices – Remote Control

On the "Remote Control" menu the remote control function is configured.

Setup menu...	⇨	Devices	⇨	Remote Control

Term	Symbol	Meaning
Port	▾	Interface type of remote control
Setup…	▭	Setup as specified by manufacturer:
		Baud Rate
		Data Bit
		Stop Bit
		Parity
Remote Control Product	▾	Remote control type as per specified list

Setup menu, continued

Record – Record

On the "Record" menu the basic settings for recordings and their quality are made.

Setup menu...	⟹	Record	⟹	Record

Term	Symbol	Meaning	
Recycle	☑	Enables automatic overwriting of the oldest recordings when the hard disk is full	
		Note: If not enabled, recording ends when the hard disk is full.	
Resolution	▾	Quality of recorded images:	
		Standard	CIF
		High	2CIF
Event Record Dwell	▾	Duration of recording when an event occurs	
Auto Deletion	▭▬━	Specify time after which automatically deleted	
Use Panic Recording	☑	Enables the panic recording function	
Panic Recording Duration	▾	Duration of panic recording	
		No Limit	End panic recording by pressing PANIC button
		xx min.	Panic recording ends after preset time or by pressing PANIC button
ips	▾	Number of recorded images per second in panic recording	
Quality	▾	Picture quality of the recorded images in panic recording	

Setup menu, continued

Record – Schedule

On the "Schedule" menu the schedule for recording is defined.

| Setup menu... | ⇨ | Record | ⇨ | Schedule |

Term	Symbol	Meaning	
Schedule On	☑	Enables schedule entries **Note:** A recording is made only if schedule entries are enabled. Otherwise only panic recording is possible.	
No.	⬚	Number of schedule entry	
Day	▾	Day of the week	
Range	▾	Time range at 15-minute intervals	
Mode	▾	Response:	
		No Record	-
		Time	Always record in the defined time slot in the quality set for "Time" mode
		Event	Record only in case of event in the defined time slot in the quality set fpr „Event" mode
		Time & Event	Always record in the defined time slot in the quality set for "Time" mode, also in case of event in the defined time slot in the quality set for "Event" mode
Channels	☑ ⬚	Assignment of cameras to schedule	
Settings	⬚ ▾	Picture data settings in Time and Event modes:	
		ips	Number of recorded images per second
		Quality	Picture quality of recorded images
Default.	⬚	Picture data defaults in Time and Event modes:	
		ips	Number of recorded images per second
		Quality	Picture quality of recorded images

Setup menu, continued

Record – Pre-Event

On the "Pre-Event" menu the settings for recording prior to the event are made.

| Setup menu... | ⇨ | Record | ⇨ | Pre-Event |

Term	Symbol	Meaning
No.	☑	Activates the cameras
ips	▼	Number of recorded images per second prior to the event
Quality	▼	Picture quality of the recorded images prior to the event
Dwell Time	▼	Recording time prior to the event **Note:** The pre-event recording memory capacity is limited. Consequently, the maximum recording time prior to the event, the number of recorded images and picture quality are inter-dependent.

Setup menu, continued

Event – Alarm-In

On the "Alarm-In" menu the alarm inputs and responses to events are configured.

Setup menu... $\Rightarrow$	Event $\Rightarrow$	Alarm-In $\Rightarrow$	☐ Settings

Term	Symbol	Meaning	
No.	☑	Enables the alarm inputs	
Title	⌊ ... ⌉	Name of alarm input	
		Contact method of alarm input:	
Type	⌊ ▼ ⌉	NO	Normally Open
		NC	Normally Closed

Setup menu... $\Rightarrow$	Event $\Rightarrow$	Alarm-In $\Rightarrow$	☐ Actions 1

Term	Symbol	Meaning
No.	⌊ ⌉	Number of alarm input
Record	⌊ ... ⌉	Assignment of cameras to record in event of alarm These cameras must be in "Event" or "Time and Event" mode within the time slot: Setup menu > Record > Schedule
Alarm-Out	⌊ ... ⌉ ☑	Assign and enable alarm outputs internal beep by DVR These alarm outputs and the internal beep must be enabled within the time slot: Setup menu > Devices > Alarm-Out > Schedule
Notify	⌊ ... ⌉ ☑	Assign and enable notifications: Mail Modem LAN 1 to LAN 5 Alert Window The selected function must be enabled: Setup menu > Network > Notification

Setup menu, continued

Setup menu...	⇨	Event	⇨	Alarm-In	⇨	▭ Actions 2

Term	Symbol	Meaning
No.	▭	Number of alarm input
PTZ	⬚ ... ⬚ ▾	Select PTZ cameras to record in event of alarm and select the desired settings
Spot Monitor	⬚ ... ⬚ ▾	Select spot monitor on which camera image is displayed in event of alarm

Setup menu, continued

Event – Motion Detection

On the "Motion Detection" menu the motion-sensitive zones are defined and responses to events configured.

| Setup menu... | ⇨ | Event | ⇨ | Motion Detection | ⇨ | ☐ Settings |

Term	Symbol	Meaning	
No.	☑	Enables motion detection for the camera	
Sensitivity	⬚ ...	Sensitivity of motion detection:	
		Daytime	
		Nighttime	
Zone	⬚ ...	Select the motion-sensitive blocks within the time slot Left mouse button functions: ● Click to select/deselect ● Click - hold down - drag to define a zone for selection/deletion/back Right mouse button functions or menu in time slot to select blocks:	
		Select	Select complete row of blocks
		Clear	Clear selection of a row
		Reverse	Reverse selection of a row
		Select all	Select all blocks
		Clear all	Clear selection of all blocks
		Reverse all	Reverse selection of all blocks
Min. Blocks	⬚ ...	Specify in how many motion-sensitive blocks motion must be detected as a minimum to trigger an alarm:	
		Daytime	
		Nighttime	
Zone View	☑	Mark the motion-sensitive zones (red in event of motion)	
Motion Ignoring Interval	⬚ ▾	Time interval between 2 events logged as separate events:	
		Never	Each motion detection is logged as a separate event.
Daytime Setup	☐	Definition of "Daytime" time range	

Setup menu, continued

Setup menu...	⇨	Event	⇨	Motion Detection	⇨	☐ Actions 1

Term	Symbol	Meaning
No.	▢	Number of alarm input
Record	⌐...⌐	Assignment of cameras to record in event of alarm These cameras must be in "Event" or "Time and Event" mode within the time slot: Setup menu > Record > Schedule
Alarm-Out	⌐...⌐ ☑	Assign and enable ● alarm outputs ● internal beep by DVR These alarm outputs and the internal beep must be enabled within the time slot: Setup menu > Devices > Alarm-Out > Schedule
Notify	⌐...⌐ ☑	Assign and enable notifications: Mail Modem LAN 1 to LAN 5 Alert Window The selected function must be enabled: Setup menu > Network > Notification

Setup menu...	⇨	Event	⇨	Motion Detection	⇨	☐ Actions 2

Term	Symbol	Meaning
No.	▢	Number of alarm input
PTZ	⌐...⌐ ▼	Select PTZ cameras to record in event of alarm and select the desired settings
Spot Monitor	⌐...⌐ ▼	Select spot monitor on which camera image is displayed in event of alarm

Setup menu, continued

Event – Video Loss

On the "Video Loss" menu checking for covert cameras and the responses to events are configured.

Setup menu... ⇨	Event ⇨	Video Loss ⇨	🗀 Settings

Term	Symbol	Meaning	
Check Obscuration	▭▬▭	Sensitivity of check as to whether camera is covert:	
		Never	not checked
		15	very sensitive

Setup menu... ⇨	Event ⇨	Video Loss ⇨	🗀 Actions 1

Term	Symbol	Meaning
No.	▭	Number of covert camera
Record	▭... ☑	Assignment of cameras to record in event of alarm These cameras must be in "Event" or "Time and Event" mode within the time slot: Setup menu > Record > Schedule
Alarm-Out	▭... ☑	Assign and enable ● alarm outputs ● internal beep by DVR These alarm outputs and the internal beep must be enabled within the time slot: Setup menu > Devices > Alarm-Out > Schedule
Notify	▭... ☑	Assign and enable notifications:
		Mail
		Modem
		LAN 1 to LAN 5
		Alert Window
		The selected function must be enabled: Setup menu > Network > Notification

Setup menu, continued

Term	Symbol	Meaning
No.	▭	Number of covert camera
PTZ	▭ ... ▭ ▾	Select PTZ cameras to record in event of alarm and select the desired settings
Spot Monitor	▭ ... ▭ ▾	Select spot monitor on which camera image is displayed in event of alarm

Setup menu, continued

Event – Text-In

On the "Text-In" menu the text input device is defined and the responses to text input are configured.

| Setup menu... | ⇨ | Event | ⇨ | Text-In | ⇨ | 🗀 Settings |

Term	Symbol	Meaning
No.	⬜	Number of text input device
Setup	⬜	Configuration of text input >>
Title	⬜...	Name of text input

⇨ 🗀 **Setup**

Term	Symbol	Meaning
Port	⬜▾	Interface
Setup…	⬜	Setting as specified by manufacturer of text input device (ATM, cash-till etc.):
		Baud Rate
		Data Bit
		Stop Bit
		Parity
Text-In Product	⬜▾	Type of text input:
		Generic Text
		Epson
Transaction Start	⬜...	Character string with which text input must start for the DVR to respond
Any Character	☑	DVR responds to any character
Transaction End	⬜...	Character string with which text input must end for the DVR to respond
0 more line(s)	⬜▾	Enables recording of n more lines
Line Delimiter	⬜...	Line delimiter as specified by the text input device manufacturer: ^J for LF or ^M for CR
Ignore String	⬜...	Character string in the text input which the DVR is to ignore. All transmittable character strings are specified by the text input device manufacturer.
Case Sensitive	☑	Case sensitivity according to text input device manufacturer's specification

Setup menu, continued

Term	Symbol	Meaning
No.	▭	Number of alarm input
Record	▭...	Assignment of cameras to record in event of alarm These cameras must be in "Event" or "Time and Event" mode within the time slot: Setup menu > Record > Schedule
Alarm-Out	▭... ☑	Assign and enable ● alarm outputs ● internal beep by DVR These alarm outputs and the internal beep must be enabled within the time slot: Setup menu > Devices > Alarm-Out > Schedule
Notify	▭... ☑	Assign and enable notifications: Mail Modem LAN 1 to LAN 5 Alert Window The selected function must be enabled: Setup menu > Network > Notification

Term	Symbol	Meaning
No.	▭	Number of alarm input
PTZ	▭... ▾	Select PTZ cameras to record in event of alarm and select the desired settings
Spot Monitor	▭... ▾	Select spot monitor on which camera image is displayed in event of alarm

Setup menu, continued

Event – System Event

On the "System Event" menu the self-diagnostics and corresponding messages are configured.

| Setup menu... | ⇨ | Event | ⇨ | System Event | ⇨ | 📁 Health Check |

Term	Symbol	Meaning
System	⬇	System self-diagnostics interval
Check Recording	☐	Setup... . Configuration of schedule >>
Check Alarm-In	⬇	Interval and status for checking alarm inputs

⇨ 📁 Setup

Term	Symbol	Meaning
Schedule On	☑	Enables schedule entries
No.	☐	Number of schedule entry
Day	⬇	Day of the week
Range	⬇	Time range at 15-minute intervals
Interval	⬇	Checking interval

| Setup menu... | ⇨ | Event | ⇨ | System Event | ⇨ | 📁 Storage |

Term	Symbol	Meaning
Disk Bad Notify	⬇	Percentage of bad sectors on hard disk as from which an alarm is triggered
Disk Almost Full Notify	⬇	Percentage hard disk space available as from which "Disk Almost Full" alarm is triggered
Setup…	☐	Configuration of data media S.M.A.R.T. check. Opens a window in which the frequency rate and time and a temperature limit (in Celsius or Fahrenheit) for the S.M.A.R.T. check can be specified. If the temperature limit is exceeded an alarm is triggered. For details of your hard disk's temperature limit refer to the manufacturer's manual.

Setup menu, continued

Term	Symbol	Meaning	
		Events (based on checks):	
		System	System check failed
		Panic Record	Panic recording in progress
		Check Recording	Recording check failed
		Check Alarm-In	Check of alarm inputs failed
Event	▭	Disk Almost Full	Preset limit value for hard disk capacity reached
		Disk Full	Hard disk full
		Disk Bad	Preset limit value for number of bad sectors reached
		Disk Temperature	Preset temperature limit reached
		Disk S.M.A.R.T.	S.M.A.R.T. check failed
Alarm-Out	▭... ☑	Assign and enable • alarm outputs • internal beep by DVR **Note:** Not possible for system event and panic recording	
Notify	▭... ☑	Assign and enable notifications:	
		Mail	
		Modem	(not in case of system event)
		LAN 1 to LAN 5	(not in case of system event)
		Alert Window	(not in case of system event)
		The selected function must be enabled: Setup menu > Network > Notification	

Setup menu, continued

Event – Event Status

The "Event Status" menu indicates the status of all possible events:

- Grey text: Event detection not enabled
- White text: Event detection enabled
- Flashing border: Message – acute event for 5 sec
- Yellow field: Pending event

Setup menu...	⇨	Event	⇨	Event Status	⇨	▭ Event Status

Term	Event
Alarm-In	At alarm input 1 to 16
Check Alarm-In	Error detected at one of alarm inputs 1 to 16
Motion	Motion detected on camera 1 to 16
Video Loss	Video loss on camera 1 to 16
Text-In	Text input on text input device 1 to 16
Panic Record	Panic recording
Check Recording	On checking the recording
Disk Almost Full	On checking the data medium (only if DVR is not operating in Overwrite mode)
Disk Full	On checking the data medium (only if DVR is not operating in Overwrite mode)

Setup menu...	⇨	Event	⇨	Event Status	⇨	▭ Storage

Term	Meaning
Type	Memory type
Disk Bad	Data carrier status
Temperature	Data carrier status
S.M.A.R.T.	Result of S.M.A.R.T. check

Specifications DLR3-08N/XX

Model	DLR3-08N/160CD	DLR3-08N/410CD	DLR3-08N/660CD
EDP no.	71923	71924	71925
Video standard	PAL/NTSC (auto detection)		
Remark	-		
Event logs	Unlimited number of entries for alarm/event/text messages, loss of signal		
Security against unauthorised use	Key locking, 64 user groups with programmable access (up to 256 users)		
Transmission rate	100 images per sec (PAL)		
Alarm triggering	E-mail, pager, remote SW (RAS)		
Alarm activation	Automatic multi-screen display of alarm images programmable		
Remote control	-		
Text display interface	ATM/POS, 10 channels max.		
Monitor display	Real-time playback: 25 field images per sec (PAL), 30 field images per sec (NTSC) per camera		
Covert camera mode	Programmable		
Time synchronisation	Network time protocol, network time server		
System change log	Up to 5000 entries for login/logout, configuration changes, remote access, change of signal connection, disk read/write errors		
Zoom function	2x		
Playback	Frame image, 4-, 8-channel split, PIP		
Post-alarm recording	Up to 15 minutes		
VGA	-		
Control interface	RS-485 port for PTZ control (verified protocols: eneo-Fastrax, Pelco P/D) or keyboard connection for remote control		
Activity detection	Programmable 16 x 12 (192) grid, 5 sensitivity settings		
Simplex/Duplex/Triplex/Pen-taplex mode	Duplex		
Video inputs	8x 1 Vp-p, (F)BAS, 75 Ohm, BNC, loop-through		
Monitor outputs	1x spot output 1 Vp-p, (F)BAS, 75 Ohm, BNC		
Video output	1x 1 Vp-p, (F)BAS, 75 Ohm, BNC; 1x S-VHS, S= 1 Vp-p, C= 0.3 Vp-p, 75 Ohm		
Audio input	2x amplifier input, cinch		
Audio output	1x amplifier output, cinch		
Resolution	720 x 576 pixels (display)		
Compression method	MPEG-4, higher compression rates with same picture quality enable maximum recording times		
Recording speed	100 field images per sec at CIF resolution (336 x 272 pixels/PAL), 50 field images per sec at 2CIF resolution (672 x 272 pixels/PAL)		

Model	DLR3-08N/160CD	DLR3-08N/410CD	DLR3-08N/660CD
Picture size	Basic: 2/2.4 KB; Standard: 4/4.8 KB; High: 8/9.6 KB; Very high: 12/14.4 KB (NTSC/PAL). 2 times larger in High Resolution mode		
Hard disk capacity	160 GB ATA hard disk, expandable to as many as 3 internal hard disks	410 GB ATA hard disk, expandable to as many as 3 internal hard disks	660 GB ATA hard disks
Playback speed	25 field images per sec at CIF resolution (336 x 272 pixels/PAL) and Duplex		
Export of picture data	via USB 2.0, CD writer. Network data export: Clip Player, AVI, JPG, BMP		
Alarm inputs	8x TTL, programmable as NC/NO (terminal strip)		
Alarm outputs	2x relay output (terminal strip)		
Alarm reset	1x TTL (terminal strip)		
Alarm messages	System error, hard disk error		
Pre-alarm recording	Up to 30 minutes		
Recording medium	ATA-2 (EIDE) hard disks, built-in CD-RW writer		
Archiving	-		
Menu languages	German, English, Italian, French, Spanish, Polish, Russian, Czech, Hungarian		
Ethernet port	10Base-T, 100Base-TX, RJ-45		
Remote software	For remote administration and image search function (RAS plus included)		
Ports	2x USB, 1x RS-485, 1x RS-232 (remote control/configuration or modem)		
Power Supply	100 VAC~230VAC, 50/60Hz		
Power consumption	approx. 150 W		
Temperature range	5°C to 40°C		
Housing	Metal with plastic front panel		
Colour	Pantone 427C		
Dimensions (H x W x D)	88 x 430 x 405 mm		
Weight	approx. 10.2 kg		

Specifications DLR3-16N/XX

Model	DLR3-16N/160CD	DLR3-16N/410CD	DLR3-16N/660CD
EDP No.	71926	71927	71928
Video standard	PAL/NTSC (auto detection)		
Remark	-		
Event logs	Unlimited number of entries for alarm/event/text messages, loss of signal		
Security against unauthorised use	Key locking, 64 user groups with programmable access (up to 256 users)		
Transmission rate	100 images per sec (PAL)		
Alarm triggering	E-mail, pager, remote SW (RAS)		
Alarm activation	Automatic multi-screen display of alarm images programmable		
Remote control	-		
Text display interface	ATM/POS, 10 channels max.		
Monitor display	Real-time playback: 25 field images per sec (PAL), 30 field images per sec (NTSC) per camera		
Covert camera mode	Programmable		
Time synchronisation	Network time protocol, network time server		
System change log	Up to 5000 entries for login/logout, configuration changes, remote access, change of signal connection, disk read/write errors		
Zoom function	2x		
Playback	Frame image, 4-/9-/16-channel split, PIP		
Post-alarm recording	Up to 15 minutes		
VGA	-		
Control interface	RS-485 port for PTZ control (verified protocols: eneo-Fastrax, Pelco P/D) or keyboard connection for remote control		
Activity detection	Programmable 16 x 12 (192) grid, 5 sensitivity settings		
Simplex/Duplex/Triplex/Pen-taplex mode	Duplex		
Video inputs	16x 1 Vp-p, (F)BAS, 75 Ohm, BNC, loop-through		
Monitor outputs	1x spot output 1 Vp-p, (F)BAS, 75 Ohm, BNC		
Video output	1x 1 Vp-p, (F)BAS, 75 Ohm, BNC; 1x S-VHS, S= 1 Vp-p, C= 0.3 Vp-p, 75 Ohm		
Audio input	2x amplifier input, cinch		
Audio output	1x amplifier output, cinch		
Resolution	720 x 576 pixels (display)		
Compression method	MPEG-4, higher compression rates with same picture quality enable maximum recording times		
Recording speed	100 field image per sec at CIF resolution (336 x 272 pixels/PAL), 50 field image per sec at 2CIF resolution (672 x 272 pixels/PAL)		

Model	DLR3-16N/160CD	DLR3-16N/410CD	DLR3-16N/660CD
Picture size	Basic: 2/2.4 KB; Standard: 4/4.8 KB; High: 8/9.6 KB; Very high: 12/14.4 KB (NTSC/PAL). 2 times larger in High Resolution mode		
Hard disk capacity	160 GB ATA hard disk, expandable to as many as 3 internal hard disks	410 GB ATA hard disk, expandable to as many as 3 internal hard disks	660 GB ATA hard disks
Playback speed	25 field image per sec at CIF resolution (336 x 272 pixels/PAL) and Duplex		
Export of picture data	via USB 2.0, CD writer. Network data export: Clip Player, AVI, JPG, BMP		
Alarm inputs	16x TTL, programmable as NC/NO (terminal strip)		
Alarm outputs	2x relay output (terminal strip)		
Alarm reset	1x TTL (terminal strip)		
Alarm messages	System error, hard disk error		
Pre-alarm recording	Up to 30 minutes		
Recording medium	ATA-2 (EIDE) hard disks, built-in CD-RW writer		
Archiving	-		
Menu languages	German, English, Italian, French, Spanish, Polish, Russian, Czech, Hungarian		
Ethernet port	10Base-T, 100Base-TX, RJ-45		
Remote software	For remote administration and image search function (RAS plus included)		
Ports	2x USB, 1x RS-485, 1x RS-232 (remote control/configuration or modem)		
Power Supply	100 VAC~230VAC, 50/60Hz		
Power consumption	approx. 150 W		
Temperature range	5°C to 40°C		
Housing	Metal with plastic front panel		
Colour	Pantone 427C		
Dimensions (H x W x D)	88 x 430 x 405 mm		
Weight	approx. 10.2 kg		

Accessories

EDP No.	Short description
71857	250GB hard disk for DLR/DXR/DTR and DCR
71919	500GB hard disk for DLR/DXR/DTR and DCR
74088	System keyboard with 3-axis joystick
74092	System keyboard with joystick, 5" monitor
71902	USB mouse for DVR series DXR, DLR3

Supported PTZ cameras

Manufacturer	Designation	Manufacturer	Designation
Costar	CDC 2500	Ademco Video	Orbiter Microsphere
Dyna Color	CDC2400	SysMania	ORX_1000
Chilsung	CRD-J6416	Linlin	PIH-717
Fine	CRR-1660s	ELMO	PTC-200C/CVAS
Pelco	D-protocol	ELMO	PTC-250C
Dennard	Dennard2060	Pacom	Pacom 2036
Tokina	DMP-1223	Dongyang	Power Controller
Dongyang Unitech	DRX-500	Sungjin	Receiver/MPU
Dongyang	DY-255RXC	Costar	SIC722V
Sensormatic	Delta Dome II/Ultra IV	Samsung Techwin	SPD 1600
Eneo	Fastrax	Samsung	Samsung Dome
Philips	G3 Basic AutoDome	Pelco	Spectra Dome
LG Honeywell)	GRU604A	Samsung Techwin	SRX-100B
JVC	TK-S576	Hitron	Speed Dome
Sensormatic	Ultra VI		
Canon	VC-C4		
Canon	VC-C50i		
Inter-M	VRX-2201		
Vicon	Vicon		
Hitron	22x AF Zoom		
360Vision	VisionDome		
Panasonic	WJ-SX550A		
Panasonic	WV-CS850/854		
CBC	ZC-SD622J		
Samsung	Zoom Camera		
Honeywell	HDC-655		
LG Honeywell	HSD-25X		
Honeywell	HSDN-251		
Idis	IRX-100		
Ultrak	KD6		
Ultrak	KD6 Z-series		
Kalatel	KTD-312		
LG	LPT-A100L		
	Novus-C		
Samsung	MRX-1000		

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Notes on disposal

Correct disposal of this DVR

WEEE (Waste Electrical & Electronic Equipment)

Applicable in the member states of the European Union and other European countries with a separate collection system

The marking on the DVR and on the documentation stipulates that it must not be thrown away in normal domestic waste at the end of its useful life.

General rules

► Avoid uncontrolled waste disposal: Please dispose of this DVR separately from other waste, so as to avoid posing a hazard to the environment and to human health.

► Recycle the DVR in order to aid the sustainable reuse of material resources.

Private users

► Contact the retailer from whom you purchased the DVR or your competent local authority to find out how you can recycle the DVR in an environmentally friendly way.

Commercial users

► This DVR must not be thrown away with trade waste. To clarify the conditions of disposal, check your purchase contract or contact your supplier.

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